



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,764	05/30/2000	Bunsen Y. Wong	MM0011	1163

7590

07/29/2003

David M. Sigmond
Maxtor Corporation
Bldg. 2405, Room B159
2452 Clover Basin Drive
Longmont, CO 80503

EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 07/29/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

AS13

Office Action Summary

Application N .

09/584,764

Applicant(s)

WONG ET AL.

Examiner

Holly Rickman

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 51-60 is/are allowed.
- 6) ☒ Claim(s) 11-23 and 27-50 is/are rejected.
- 7) ☒ Claim(s) 24-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 11-20, 29 and 31-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed fails to provide support for the claimed concept of a first alloy composition containing as much as or more boron as a second alloy composition. Several examples are provided wherein this relationship between the amount of boron in the first and second layer is as claimed. However, this merely indicates that Applicant has support for a structure having those specific alloy compositions.

3. The rejection of claims 21 and 39 under 35 U.S.C. 112, second paragraph, is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 102

4. The rejection of claims 11-13, and 18 under 35 U.S.C. 102(b) as being anticipated by Zhang (US 5772857) is withdrawn in view of Applicant's arguments and amendments.

Claim Rejections - 35 USC § 102/103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The rejection of claims 11-13, 18-20, 31-32, 37, 39-42, 47, and 49-50 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bian et al. (US 6143388) is withdrawn in view of Applicant's amendments.

7. Claims 21-22, 27, and 29-30 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bian et al. (US 6143388).

Bian et al. disclose a magnetic recording medium having a non-magnetic substrate formed from NiP, an underlayer, a magnetic onset layer formed from CoPtCrTa and a magnetic recording layer formed from CoPtCrB. The reference fails to disclose the claimed relationship between the coercivities of the individual layers and the overall coercivity of the medium.

However, it is the Examiner's contention that the claimed coercivity limitations are inherent in Bian's disclosure. The reference teaches that the onset and recording layers having different thicknesses and different compositions. As such, one of ordinary skill in the art can conclude that the layers have different coercivities. Furthermore, one of ordinary skill in the art can conclude that the total coercivity of the medium will not be the same as that of the coercivities of the individual layers since the Hc values of the individual layers are not equal.

Art Unit: 1773

Furthermore, it is the Examiner's contention that varying the thickness fraction of the first and second magnetic layers inherently results in the claimed relationship between the change in coercivity and the change in remanence.

Claim Rejections - 35 USC § 103

8. The rejection of claims 16, 33, 38, 43, and 48 under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6143388) is withdrawn in view of Applicant's amendments.

9. Claims 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6143388).

Bian et al. disclose all of the limitations of the claims as set forth above, except for the specific compositions of the CoPtCrB and CrPtCrTa layers disclosed therein and an embodiment having the same quaternary alloys in each magnetic layer.

Bian et al. disclose a magnetic onset layer having the composition 4-14 at% Pt, 10-23 at% Cr, 1-5 at% Ta, balance Co (col. 3, lines 51-54). The reference also teaches that the magnetic layer is formed from 4-12 at% Pt, 10-23 at% Cr, 2-10 at% B, balance cobalt (col. 8, claim 22). It would have been obvious to one of ordinary skill in the art at the time of invention to choose suitable amounts of each element from within the disclosed ranges in order to produce magnetic layers having the desired magnetic properties.

The reference also teaches that the onset layer can be formed from a material such as CoPtCrB in addition to CoPtCrTa. In view of the disclosed equivalence of the two materials, it

Art Unit: 1773

would have been obvious to substitute a CoPtCrB onset layer for the CoPtCrTa onset layer used in conjunction with the CoPtCrB magnetic recording layer.

Allowable Subject Matter

10. Claims 1-10 and 51-60 are allowable over the prior art.

Claims 24-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments filed 5/9/03 have been considered but are moot in view of the new grounds of rejection.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (703) 305-2642. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1773

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Holly Rickman". The signature is fluid and cursive, with the first name "Holly" being more prominent than the last name "Rickman".

Holly Rickman
Primary Examiner
Art Unit 1773

hcr
July 27, 2003